CLAIMS

What is claimed is:

1.   A network comprising:

5   a plurality of interconnected switches, wherein said switches are programmable to selectively forward instances of network traffic; and

a plurality of devices coupled to said plurality of interconnected switches, wherein each network interface on a device is coupled to a switch;

wherein a communication path from a first device to a second device

10   is actualized by enabling intervening switches to forward an instance of network traffic from said first device to said second device, wherein an instance of network traffic sent from said first device and intended for said second device is forwarded by said intervening switches only to said second device; and

15   wherein network traffic is not forwarded between devices not communicatively coupled by an actualized communication path.

2.   The network of Claim 1 wherein a switch comprises multiple switch ports, wherein a device is coupled to a single switch port and wherein

20   a switch is couplable to multiple devices.

3.   The network of Claim 1 wherein a device comprises multiple network interfaces, wherein each network interface is coupled to ports on a same switch.

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4.   The network of Claim 1 wherein a device comprises multiple network interfaces, wherein each network interface is coupled to ports on more than one switch.

30   5.   The network of Claim 1 wherein communication between intervening switches is implemented using a data-link layer protocol corresponding to Layer 2 of the OSI (Open Systems Interconnection) model.

6.   The network of Claim 1 wherein communication paths between

35   devices are created substantially in compliance with IEEE 802.1Q.

7. The network of Claim 1 wherein said devices are organized in multiple tiers, wherein a communication path from a first tier to a second tier is actualized by enabling communication between intervening switches, wherein an instance of network traffic sent from said first tier and intended for said second tier is forwarded by said intervening switches only to said second tier.

8. The network of Claim 7 wherein a device in said first tier is removed as a member of said first tier and made a member of said second tier by selectively disabling actualized communication paths to said device and enabling new communication paths to said device.

9. The network of Claim 1 wherein said devices are organized in a plurality of local area networks (LANs), wherein communication between devices on a LAN is actualized by enabling communication between intervening switches, wherein an instance of network traffic sent over a first LAN is forwarded by said intervening switches only to said devices coupled to said first LAN.

10. The network of Claim 9 wherein a device in said first LAN is removed as a member of said first LAN and made a member of a second LAN by selectively disabling actualized communication paths to said device and enabling a new communication path to said device.

11. The network of Claim 1 wherein communication paths between devices are dynamically changeable.

12. The network of Claim 1 comprising a multi-functional device, wherein a first communication path to said multi-functional device is actualized for a first function and a second communication path to said multi-functional device is actualized for a second function.

13.   A method for configuring a network comprising a plurality of devices coupled to a plurality of interconnected switches, said method comprising:

    a) identifying a communication path between a first device and a

5   second device, said communication path comprising intervening switches coupled between said first and second devices, wherein each network interface on a device is coupled to a switch; and

    b) actualizing said communication path by enabling said intervening switches to forward network traffic from said first device to said second

10   device, wherein an instance of network traffic sent from said first device and intended for said second device is forwarded by said intervening switches only to said second device;

    wherein network traffic is not forwarded between devices not communicatively coupled by an actualized communication path.

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16.   The method as recited in Claim 13 wherein a switch comprises multiple switch ports, wherein a device is coupled to a single switch port and wherein a switch is couplable to multiple devices.

20   15.   The method as recited in Claim 13 wherein a device comprises multiple network interfaces, wherein each network interface is coupled to ports on a same switch.

16.   The method as recited in Claim 13 wherein a device comprises

25   multiple network interfaces, wherein each network interface is coupled to ports on more than one switch.

17.   The method as recited in Claim 13 wherein communication between intervening switches is implemented using a data-link layer

30   protocol corresponding to Layer 2 of the OSI (Open Systems Interconnection) model.

18.   The method as recited in Claim 13 wherein communication paths between devices are created substantially in compliance with IEEE

35   802.1Q.

19. The method as recited in Claim 13 wherein said devices are organized in multiple tiers, wherein a communication path from a first tier to a second tier is actualized by enabling communication between intervening switches, wherein an instance of network traffic sent from said first tier and
5 intended for said second tier is forwarded by said intervening switches only to device on said second tier.

20. The method as recited in Claim 19 comprising:
disabling selected actualized communication paths to a device to
10 remove said device as a member of said first tier; and
enabling a new communication path to said device to make said device a member of said second tier.

21. The method as recited in Claim 13 wherein said devices are
15 organized in a plurality of local area networks (LANs), wherein communication between devices on a first LAN is actualized by enabling communication between intervening switches, wherein an instance of network traffic over said first LAN is forwarded by said intervening switches only to devices coupled to said first LAN.
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22. The method as recited in Claim 21 comprising:
disabling selected actualized communication paths to a device to remove said device as a member of said first LAN; and
enabling a new communication path to said device to make said
25 device a member of a second LAN.

23. The method as recited in Claim 13 wherein communication paths between devices are dynamically changeable.

30 24. The method as recited in Claim 13 comprising:
enabling and disabling selected communication paths to a multi-functional device according to a function being performed by said multi-functional device.

25.   A method for managing a network comprising a plurality of devices coupled to a plurality of interconnected switches, said method comprising:

a) configuring said network in a first configuration comprising a first set of actualized communication paths between devices, wherein instances of network traffic are selectively forwarded through said network by programming said switches, wherein a communication path between devices is actualized by enabling intervening switches to forward network traffic between said devices, wherein an instance of network traffic intended for a particular device is forwarded only to said particular device and wherein network traffic is not forwarded between devices not communicatively coupled by an actualized communication path; and

b) changing said network to a second configuration comprising a second set of actualized communication paths different from said first set, wherein said step of changing comprises selectively disabling actualized communication paths and enabling new communication paths.

26.   The method as recited in Claim 25 comprising:

monitoring network performance against a threshold, wherein said step b) is implemented when said threshold level is crossed.

27.   The method as recited in Claim 25 comprising:

monitoring application performance against a threshold, wherein said step b) is implemented when said threshold is crossed.

28.   The method as recited in Claim 25 wherein a switch comprises multiple switch ports, wherein a device is coupled to a single switch port and wherein a switch is couplable to multiple devices.

29.   The method as recited in Claim 25 wherein a device comprises multiple network interfaces, wherein each network interface is coupled to ports on a same switch.

30.   The method as recited in Claim 25 wherein a device comprises multiple network interfaces, wherein each network interface is coupled to ports on more than one switch.

31.   The method as recited in Claim 25 wherein communication between intervening switches is implemented using a data-link layer protocol corresponding to Layer 2 of the OSI (Open Systems

5   Interconnection) model.

32.   The method as recited in Claim 25 wherein communication paths between devices are created substantially in compliance with IEEE 802.1Q.

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33.   The method as recited in Claim 25 wherein said devices are organized in multiple tiers, wherein a communication path from a first tier to a second tier is actualized by enabling communication between intervening switches, wherein an instance of network traffic sent from said first tier and

15   intended for said second tier is forwarded by said intervening switches only to said second tier.

34.   The method as recited in Claim 33 wherein said step b) comprises:

20   disabling selected actualized communication paths to a device to remove said device as a member of said first tier; and
enabling a new communication path to said device to make said device a member of said second tier.

25   35.   The method as recited in Claim 25 wherein said devices are organized in a plurality of local area networks (LANs), wherein communication between devices on a first LAN is actualized by enabling communication between intervening switches, wherein an instance of network traffic over said first LAN is routed by said intervening switches only

30   to devices coupled to said first LAN.

36.   The method as recited in Claim 35 wherein said step b) comprises:
disabling selected actualized communication paths to a device to

35   remove said device as a member of said first LAN; and

enabling a new communication path to said device to make said device a member of a second LAN.

37. The method as recited in Claim 25 wherein said step b)
5 comprises:

enabling and disabling selected communication paths to a multi-functional device according to a function being performed by said multi-functional device.